REMARKS

This application has been reviewed in light of the Office Action dated May 8, 2003. In view of the foregoing amendments and the following remarks, favorable reconsideration and withdrawal of the objections and rejections set forth in the Office Action are respectfully requested.

Claims 24-28 and 61-83 are pending. Claims 24-28 and 61-72 are withdrawn from consideration. Claims 73 and 83 have been amended. Claims 24, 25, 73 and 83 are in independent form.

The Abstract was objected to on a formal ground, and has been amended accordingly. Withdrawal of this objection is respectfully requested.

The title was objected to a formal ground, and has been amended as suggested by the Examiner. Withdrawal of this objection is respectfully requested.

Claims 73-83 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 73 and 83 have been amended to address the points raised by the Examiner. Withdrawal of this objection is respectfully requested.

Claims 73, 74, 79-81 and 83 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,500,988 (*Moynihan et al.*). Claims 75-78 and 82 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Moynihan et al.* in view of European Patent Publication EP 0 930 165 (*EP '165*). Applicants respectfully traverse these rejections.

Claim 73 recites a method for manufacturing a piezoelectric element structure having a supporting substrate and a piezoelectric film supported on the supporting substrate. The method comprises a step of forming on the supporting substrate, in this order, a first layer having a perovskite structure and a second layer having a perovskite structure and zirconium, a temperature at a time of formation of the first and second layers being at least 500°C, and the first layer being formed so as to contain no zirconium or an amount of zirconium less than an amount of zirconium contained in the second layer; and a step of cooling from the formation temperature at least to 450°C with a cooling speed of at least 30°C/minute.

According to Applicants' understanding, *Moynihan et al.* relates to a method of making a perovskite thin-film ink jet transducer. The Office Action cites *Moynihan et al.* as teaching, *inter alia*, "a first layer (electrodes 17) having a perovskite structure and a second layer having a perovskite structure and zirconium (see col. 1, lines 14-16); . . . with the first layer having no, or zero, composition of zirconium (see col. 4, lines 31-37) . . . ." However, Applicants submit that there is no disclosure in *Moynihan et al.* that electrodes 17 have a perovskite structure. Electrodes 17 are formed from "layer 12 of conductive material," which "may be a sputtered or a vacuum-evaporated aluminum, nickel, chromium or platinum layer or an indium tin oxide (ITO) layer" (col. 4, lines 31-47). Electrodes 17 having such a composition cannot have a perovskite structure. Accordingly, Applicants submit that nothing in *Moynihan et al.* would teach or suggest at least a step of forming on the supporting substrate, in this order, a first layer having a perovskite structure and a second layer having a perovskite structure and zirconium, a temperature at a time of formation of the first and second layers being at least

500°C, and the first layer being formed so as to contain no zirconium or an amount of zirconium less than an amount of zirconium contained in the second layer.

According to Applicants' understanding, *EP '165* relates to an ink jet head including a piezoelectric film comprising a first layer and a second layer each having a perovskite structure. However, *EP '165* is not seen to remedy the deficiencies of *Moynihan et al.* discussed above.

Since neither *Moynihan et al.* nor *EP '165*, whether taken singly or in combination (even assuming, for the sake of argument, that such combination were permissible), contains all of the elements of Claim 73, that claim is believed allowable over the cited art. Claim 83 recites features similar or identical to those recited in Claim 73 and is therefore believed allowable over the cited art for at least the same reasons.

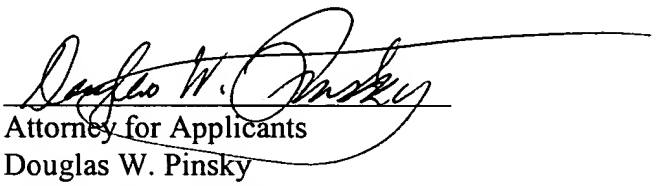
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against Claims 73 and 83. Those claims are therefore believed patentable over the art of record.

Claims 74-82 are each dependent from Claim 73 and are therefore believed patentable for at least the same reasons. Since each of these dependent claims is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our Washington, D.C. Office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below- listed address.

Respectfully submitted,



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